

Examiners' Report

June 2016

GCSE Design and Technology

Food 2 5FT02 01

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Introduction

The format and structure of this question paper is now well established. It is clear that teachers and candidates are familiar with the layout and have used past papers and previous examiners' reports during preparations for this examination.

On the whole candidates' performance is improving on the two questions that assess QWC (Quality of Written Communication) by providing answers that have more structure. Candidates' level of response to the *describe* and *explain* type questions is showing improvement.

Centres are continuing to make good progress with their teaching and learning activities in Food Technology.

The delivery of knowledge, understanding and skills across a wide range of ingredients, components, materials and processes in the Food Technology course, continues to show improvements in student outcomes in all areas of the specification. This includes the use of primary and secondary foods in food preparation, processing and preservation, nutrition and health issues, product analysis and product manufacture topics in both domestic and industrial areas of study.

There were a range of levels of outcome for candidates, as to be expected with the mixed cohort of students. This paper contained a broad and varied distribution of marks across the paper, which achieved a good balance of recall, selection, application and communication of knowledge and understanding in Food Technology, as well as product analysis and evaluation, through short and extended writing activities, and communication of ideas through the design question.

Candidates are reminded to keep their answers within designated areas and use concise sentences or bullet points where appropriate.

'Explain' style questions continue to cause problems for some candidates and teachers are advised to prepare candidates in the use of the following command words:

- Give, State, Name (1 mark) - These type of questions will usually appear at the beginning of the paper or question part and are designed to ease candidates into the question with a single statement or short phrase for one mark.
- Describe, Outline (2+ marks) - These types of questions are more straightforward. They require candidates to describe something in detail. Some questions may also ask candidates to use notes and sketches, therefore marks can be gained with the use of a clearly labelled sketch.
- Explain, Justify (2+ marks) - These types of questions require candidates to respond in a little more detail. Single statements will not achieve full marks. A valid point should be made and then justified.
- Evaluate, Discuss, Compare (4+ marks) - These type of questions are designed to 'stretch and challenge' candidates. These questions require candidates to make a well balanced argument, usually involving both advantages and disadvantages.

The coverage of the subject content was thorough and varied, effectively testing the candidate's technical knowledge and understanding of Food Technology. The 'ramped' nature of the exam paper and variety of questions styles and command words promoted accessibility to students of all ability levels. Progression and application of knowledge and understanding within the subject area was evident, promoting stretch and challenge opportunities for higher ability candidates.

Marks were scored evenly across all areas of the paper, with effective differentiation across the paper. More centres made use of scribes or readers and the number of scripts that were illegible was greatly reduced this year. However, handwriting continues to be variable, with some answers illegible as a result. Some candidates lost marks through carelessness or lack of thought and effort. It is essential that candidates are made aware of the necessity to write neatly with a clear and legible black (hand writing) pen.

5FT02 paper requires candidates to answer 14 questions in 90 minutes.

The multiple choice questions and short answer questions showed levels of differentiation.

Candidates would benefit from practicing these format regularly, for example for homework exercises.

Short, concise answers tended to fair better than lengthy responses that were too wordy or went beyond the space for answers. Many candidates managed to write at considerable length in this time for the extended writing tasks. However, some of the answers were not focused on the question. Relevance rather than length is the key to high marks. Additional pieces of paper are unhelpful to the marking process, and centres should note that the amount of space provided in the booklet for answers, is more than we would expect any answer to take, and not a recommendation of the amount candidates should write.

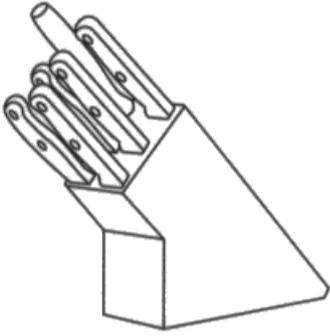
Use of terminology was disappointing this year in the extended writing questions, and candidates failed to gain marks where they presented vague, superficial answers. The coverage of the specification is well documented in past papers, and it would serve centres well to ensure they cover the full specification during the two year course in order to give their students the best chance of success in the examination component.

Question 11 (a) (1)

This was a good introductory question and was answered very well by most candidates, identifying 'knife block' correctly. There were quite a few candidates who incorrectly labelled 'box' and were unable to secure a mark for this question.

1 (a) The table below shows some tools and equipment.

Complete the table by giving the missing names and uses.

Tool/Equipment	Name	Use
	Knife Block (1)	To store sharp kitchen tools

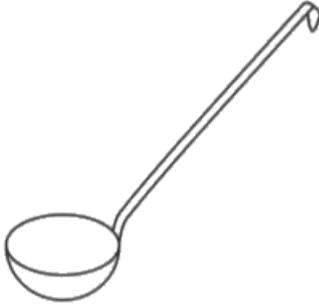


Question 11 (a) (2)

Most candidates clearly identified this as an industrial mixer or free standing bench top kitchen mixer.

Question 11 (a) (3)

A disappointing set of answers generally with many candidates incorrectly naming the equipment as a spoon.

	Ladle	To serve soup or stew (1)
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Accurate answer: serve, stir, pour, portion, measure or mix.

Question 11 (a) (4)

Many candidates correctly named the use of this item for storing kit for treating injuries.

	First aid kit	To treat wounds, it has got equipment in which treat wounds. Stores them. (1)
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Examiner Comments

To store/contain/hold/look after materials & tools used in the treatment of injury and accidents.

Question 11 (b)

A well-answered question with the most popular replies being protein, fat, fibre and calcium. A number of candidates' incorrect responses referred to vitamins and minerals.

(b) Cereals are a rich source of carbohydrates.

Name **two other** nutrients found in cereals.

(2)

1 Protein

2 Vitamin B



Question 11 (c) (i)

The preparation and processing techniques of ingredients are integral to food technology. There were mixed responses here for the uses of named cereals, with many candidates stating oats and corn as their answer, rather than giving an example of use.

(c) Cereals are crops cultivated for their edible seeds.

Give **one** use for each of the following cereals used in food production.

(2)

(i) Oats

To be made digestive biscuits



Question 11 (c) (ii)

The preparation and processing techniques of ingredients are integral to food technology. There were mixed responses here for the uses of named cereals, with many candidates stating oats and corn as their answer, rather than giving an example of use.

Question 11 (d)

Candidates' responses often commented on wholemeal flour being healthier but did not explain why. There was a limited use of key terms e.g. bran, germ, endosperm.

(d) Describe the difference in composition between white flour and wholemeal flour.

(2)

Wholemeal flour is coarse, whereas white flour is powder like.



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The most common response was based on fibre and colour. A lot of candidates did not know/explain the percentages or extraction rates for each flour.

Question 11 (e)

The majority of candidates' answers correctly identified cornflour as a useful thickening agent. There was a limited range of responses relating its benefit to coeliacs and those with gluten intolerance, for example.

(e) Describe **one** advantage for the manufacturer of using cornflour in readymade foods.

(2)

It is gluten free so it can be used to make food suitable for people with coeliac disease



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Examiner Comments

Most candidates knew that cornflour was used to thicken, but very few knew anything else. So 1 mark was the most achieved for this question by many candidates.

Question 11 (f)

Hygiene and safety underpins the specification and has obvious links across the subject content. Well answered questions overall and candidates knew about hygiene and handling high risk foods in the main.

(f) Explain why reheated cooked rice is a high risk food.

(2)

Because it is increasing risk of bacteria getting in it.



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Bacteria was the most common answer for the reheated cooked rice question with few connecting it to moisture content in order to get the 2 marks. This answer only received one mark as the linked response was missing.

Question 11 (g)

This question required candidates to describe two modifications to the pizza product that would make it suitable for a consumer following a low fat diet, based on the candidates' product analysis and evaluation skills. Many candidates offered sound modifications to the food product, focusing on removing or replacing the cheese, butter or meat. There were many imaginative variations to the recipe presented by candidates, but candidates often struggled to describe how these modifications were making it suitable for the special dietary need. Vague statements about low fat butter and low fat bacon should have been developed further into lean, grilled bacon or a plant based margarine.

This question offered stretch and challenge opportunities, and in the main this was successfully completed by candidates.

Candidates' knowledge of the requirements of a low fat diet was strong. Many explanations offered changing the cooking method or source of ingredient

The candidates answered this question well on low fat diet and had a good knowledge and understanding of modifications. However, many candidates only gained 2 marks as they identified replacing the butter /removing the bacon, but did not provide correct alternatives.

There were very good responses from candidates on low fat diet. The most common answers referred to low fat margarine and substituting the bacon for chicken/ cheese to low fat cheese. A majority of candidates included low fat butter as a substitutes.

(g) The following recipe was used to produce a prototype pizza:

250g strong plain flour

25g butter → plant based oil

1 sachet fast action yeast

150ml warm water

1 onion

50g tomatoes

25g pesto

50g cheese → low fat cheese

50g cooked bacon

Describe **two** modifications that would make the pizza suitable for someone following a low fat diet.

(4)

1. substitute the 25g of butter for a plant oil such as olive oil or sunflower oil

2. Either reduce the grams of cheese on pizza or substitute cheese for a low fat cheese.



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Knowledge by candidates about the requirements of a low fat diet was generally strong. Incorrect answers thought that "low fat butter" was a suitable substitute for butter and many discussed the salt content of the dish. Candidates gained between 3 – 4 marks with many getting full marks. Most popular correct responses were about "changing the butter to oil", "changing the cheese to low fat cheese".

(g) The following recipe was used to produce a prototype pizza:

250g strong plain flour

25g butter

1 sachet fast action yeast

150ml warm water

1 onion

50g tomatoes

25g pesto

50g cheese

50g cooked bacon

Describe **two** modifications that would make the pizza suitable for someone following a low fat diet.

(4)

1 Change the butter ~~to~~ to a low fat butter or a soya alternative.

2 Remove the bacon and add some vegetables like mushrooms.



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Most responses contained correct information with the understanding that certain ingredients have to be removed to remove the fat. Most of the responses given related to removing butter or cheese. However, there were a lot of responses given with 'low fat butter' and an indication that the student did not understand what butter was or where it came from and the type of fat it contained. This is an excellent question where the student can gain a valuable 4 marks.

Question 12

The design question produced some excellent responses from candidates with excellent sketching and annotation from candidates across the ability range. The link between coursework activities in the design task was most apparent, with some innovative food product design work. A wide range of chilled dessert products were presented with most candidates managing to illustrate and label two different ideas. Centres continue to work hard to raise achievement in this section of the question paper. All examiners noted the continued improvement in communication techniques and the ability of the candidates to be creative, imaginative and at times inventive with their recipes.

Where candidates had read the question carefully and planned their answer methodically (and sketches and annotation succeeded in showing how the design had met the specification points) they were rewarded with high marks. It is not acceptable, however, merely to label the specification points; they must be annotated, indicating how the design has met each point. The points that caused greatest difficulty were the setting agent and shelf life. Responses needed to focus on ways these are linked. Candidates should make use of the specification as a checklist to ensure that each design is annotated differently, and that each point is met for the design brief.

This was a popular question and the majority of candidates responded fully. Some of the designs were very good, being fully annotated and sketched well. There seemed to be a logical process in answering where the candidate had worked through the specification points one by one.

The second design was often not as detailed as the first, maybe due to time constraints and exam pressure.

Also, it was sometimes a duplicate of the first with few different points shown.

It is clear that Centres are improving the teaching of this question. Many candidates showed good subject knowledge and exam technique. Repeating of an answer for the specification from design 1 to design 2 was still common but less so than in previous years. The amount of annotation on sketches still varies but there are fewer candidates providing just sketches for their answers.

1. *Use a dairy food in one named component* - well answered with many correct responses – use of cream, milk, cream cheese & yoghurt were listed. Most candidates gained these marks. A few repeated the use of cream in the same way for both answers. Few Candidates were able to correctly name the type of cream: double, clotted, single, whipping.
2. *Contain one named crunchy textured component* – very well answered with many correct responses – use of biscuits, meringue, nuts & types of chocolate confectionery were listed. Most candidates gained these marks. A few repeated the use of biscuits in the same way for both answers. Few candidates were able to correctly name the type of ingredients: digestive, shortbread, ginger nut, almond, hazelnuts, etc.
3. *Use a named setting process in one component* - Poorly answered with most candidates incorrectly relying on the "fridge or freezer to set the dish" without explaining the science behind the ingredients. Most popular correct answers were: "jelly, gelatine" and a few were able to state "coagulation or gelatinisation" and link these to the correct ingredients.
4. *Be high in vitamin C* – lemon, orange, raspberries & strawberries were the most popular correct answers here. Those that failed to gain marks offered the dairy food or nuts as a source of vitamin C. Most candidates gained 2 marks here.
5. *Include a finishing technique* – Very well answered with many correct responses – use of glazes, chocolate decorations, piped cream, caramelised sugar, nuts & candied fruit were listed. Most candidates gained these marks.

6. *Have a three day shelf life* – This was poorly answered with many Candidates omitting this point in their annotation. Incorrect answers included the use of preservatives and other additives or using salt or sugar to preserve. Those that did achieve 1-2 marks cited “stored in fridge, freezer, using low risk foods or sealed in packaging” to gain the marks.
7. *Be a single portion* - A mixed effort here with many candidates just citing that it was a single portion or using the word "small" without clarification. It was noted how many of the sizes and quantities given would have been suited to a family size portion rather than a single portion. Most of the correct responses stated dimensions or weights, or drew sketches.
8. *Be sustainable* – This specification was fairly well answered. Candidates showed subject knowledge of recyclable packaging; seasonal foods; minimising food miles; local foods; use of organic, free range or Fairtrade ingredients. Those that were incorrect seemed to apply terms to any ingredient such as Fairtrade eggs which is incorrect. Some candidates failed to annotate for this point gaining zero marks but the majority were able to gain 2.

12 A manufacturer is developing a new range of chilled layered desserts to be sold in the chilled section of a supermarket.

Design specification

The specification for the chilled layered desserts is that they must:

- use a dairy food in one named component – *cheese yoghurt* ✓
- contain one named crunchy textured component, *bread, sticks* ✓
- use a named setting process in one component – *chilling, freezing*
- be high in vitamin C
- include a finishing technique *piping, glazing* ✓
- have a three-day shelf life ✓
- be single portion ✓
- be sustainable. *sustainable plastic, paper, re-usable* ✓

In the spaces opposite, use sketches and, where appropriate, brief notes to show **two different** design ideas for the chilled layered dessert product that meet the specification points above.

Candidates are reminded that if a pencil is used for diagrams/sketches it must be dark (HB or B).

Coloured pens, pencils and highlighter pens must **not** be used.

trifle.

brownie dessert

trifle

Design idea 1

3 day shelf life
displayed on
use by date
on packaging

(Finishing technique
piped cream)

good source of moisture
and is attractive which will
make it appealing (8)

Included spoon
for convenience

(cream) - good mouth
feel
recyclable plastic

custard, dairy food, has protein
good for muscles growing and repairing
crunchy texture ladyfingers
good source of carbohydrates
and high in energy

Jelly

chilled
(processing
makes it more
stable and doesn't mix
the different ingredients)

resealable one portion
container. easy to eat on
the go.
bread clear layers

Design idea 2

cheese cake

(setting) - chilled to keep the cake fresh
and keep the structure together (8)

3 day shelf life on use by
date

piped cream on top to make it
appealing. good source
of moisture

cheese (dairy)

hand held (one portion)
easy to carry
plastic

high in calcium
good for building
strong bones and
repairing. good for
teeth.

crunchy biscuit
base. high in
carbohydrates
which is a good source
of energy.

high in vitamin C

clear view of
layered dessert

plastic (recyclable)
packaging. easy to reuse

Packaging decreases global warming



Many candidates showed good subject knowledge and exam technique here with many using subtitles or numbering from the specification to guide the examiner. A few candidates still left this whole question entirely or indeed attempted the first design and left the second. Repeating of an answer for the specification from design 1 to design 2 was less common than previous years. The amount of annotation on sketches still varies from one extreme to another but there are fewer candidates providing just sketches for their answers. Incorrect choices of design were few and included dishes such as lasagne, pizza, biscuits or cakes. Weaker candidates seemed to gain 4 – 8 marks and stronger candidates gained 12- 16. More candidates gained full marks this year with the “setting process and 3 day shelf life” criteria proving most difficult. Several candidates are still writing on the diagonal or have very poor handwriting which is very tricky to read.

12 A manufacturer is developing a new range of chilled layered desserts to be sold in the chilled section of a supermarket.

Design specification

The specification for the chilled layered desserts is that they must:

1. use a dairy food in one named component
2. contain one named crunchy textured component
3. use a named setting process in one component
4. be high in vitamin C
5. include a finishing technique
6. have a three-day shelf life
7. be single portion
8. be sustainable.

In the spaces opposite, use sketches and, where appropriate, brief notes to show **two different** design ideas for the chilled layered dessert product that meet the specification points above.

Candidates are reminded that if a pencil is used for diagrams/sketches it must be dark (HB or B).

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1/2/3/4/5/6/7/8

Design idea 1

④ Blueberries will be high in Vitamin C.

⑤ Piped Jam will be drizzled over the top to make it look high quality

Jelly Pie

① Cream will be use as a dairy product.

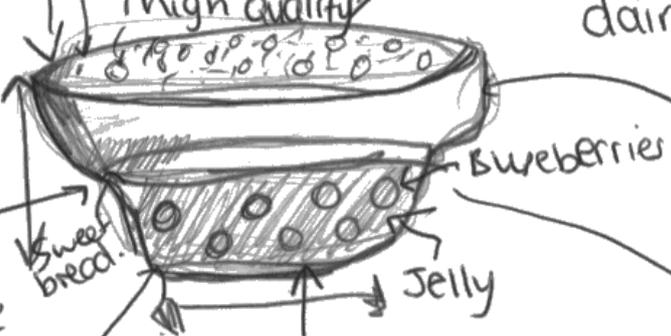
② Chocolate buttons will be placed on top to make the product have a crunch.

⑧ this product will be sustainable as I will buy all the ingredients from a local store

⑦ It will be a single portion as it will be in a container

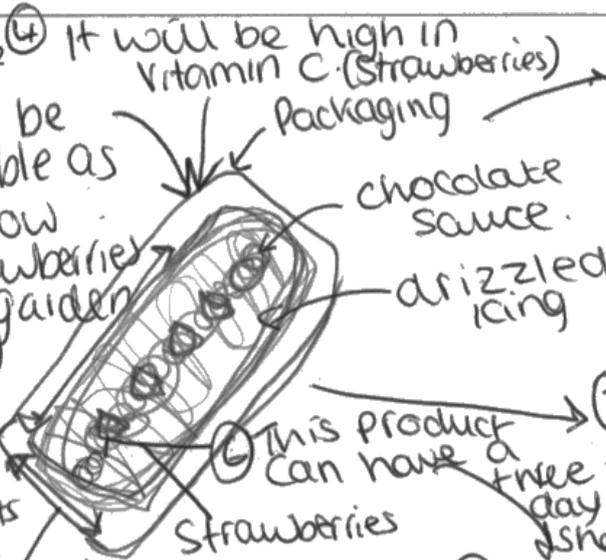
⑥ This product can have a three-day shelf life.

③ The Jelly will be set in a fridge in the container.



Design idea 2

⑧ it will be sustainable as I will grow the strawberries from my garden and buy the rest of the ingredients from a local store.



④ It will be high in Vitamin C (Strawberries) Packaging

① The chocolate will be used as a dairy food as it contains milk and butter. Strawberryclair

② The strawberries will give a crunchy texture. as it will have caramel coated in the outside of the strawberry.

⑥ This product can have a three-day shelf life

⑤ The drizzling of icing will be a finishing technique.

③ will have to set the caramel on top of the strawberries to let the caramel go hard.

(Total for Question 12 = 16 marks)

1/2/3/4/5/6/7/8



P 4 6 4 7 8 A 0 9 1 6

Turn over ▶



This question was well answered by candidates showing a good knowledge of the design process and how to set out and annotate their work. There were 2 very distinct designs included for the majority of candidates which showed progression from even possibly the year before. Candidates used good labelling of the 8 points to ensure that they recorded all responses.

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Design specification

The specification for the chilled layered desserts is that they must:

- ① • use a dairy food in one named component
- ② • contain one named crunchy textured component
- ③ • use a named setting process in one component
- ④ • be high in vitamin C
- ⑤ • include a finishing technique
- ⑥ • have a three-day shelf life
- ⑦ • be single portion
- ⑧ • be sustainable.

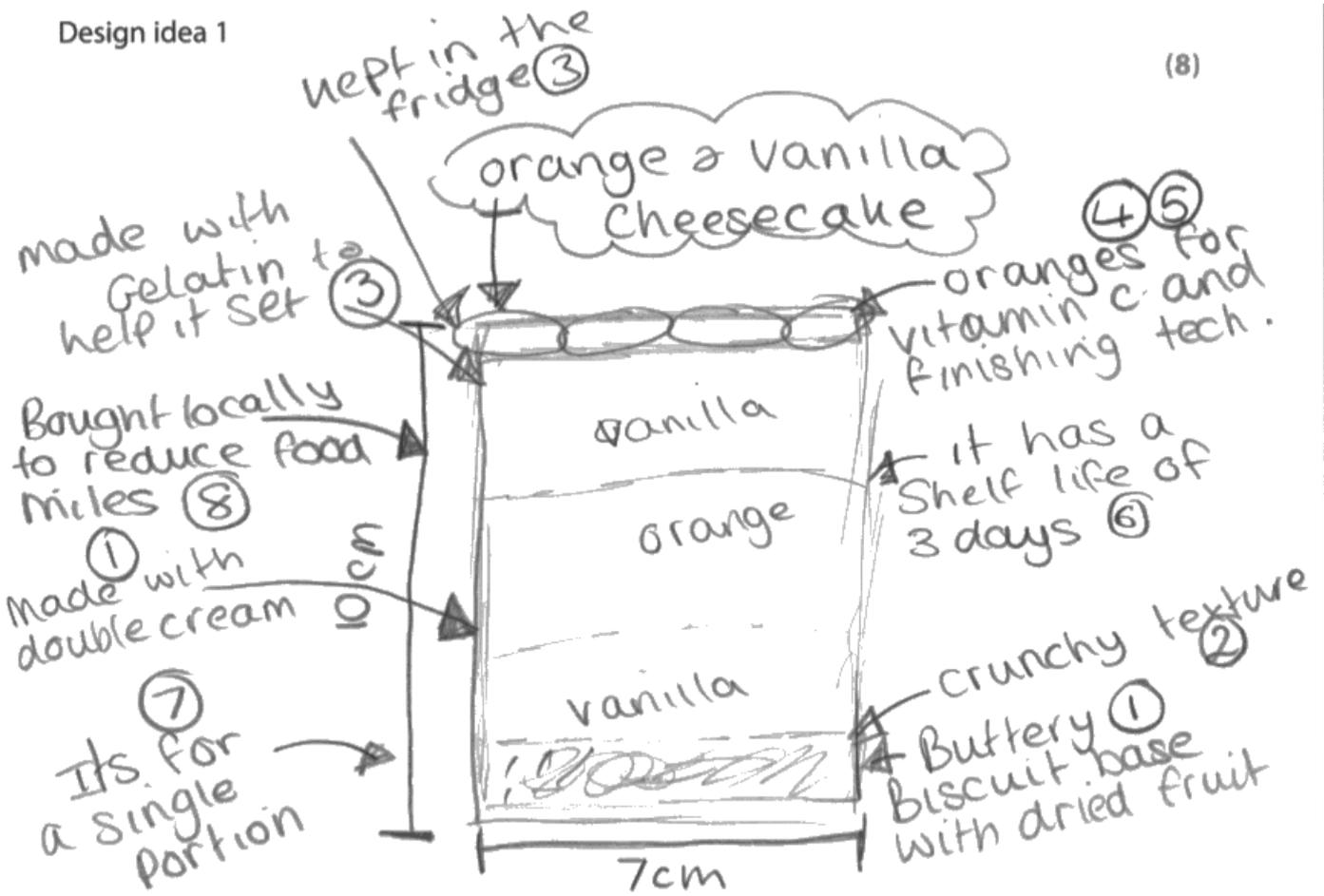
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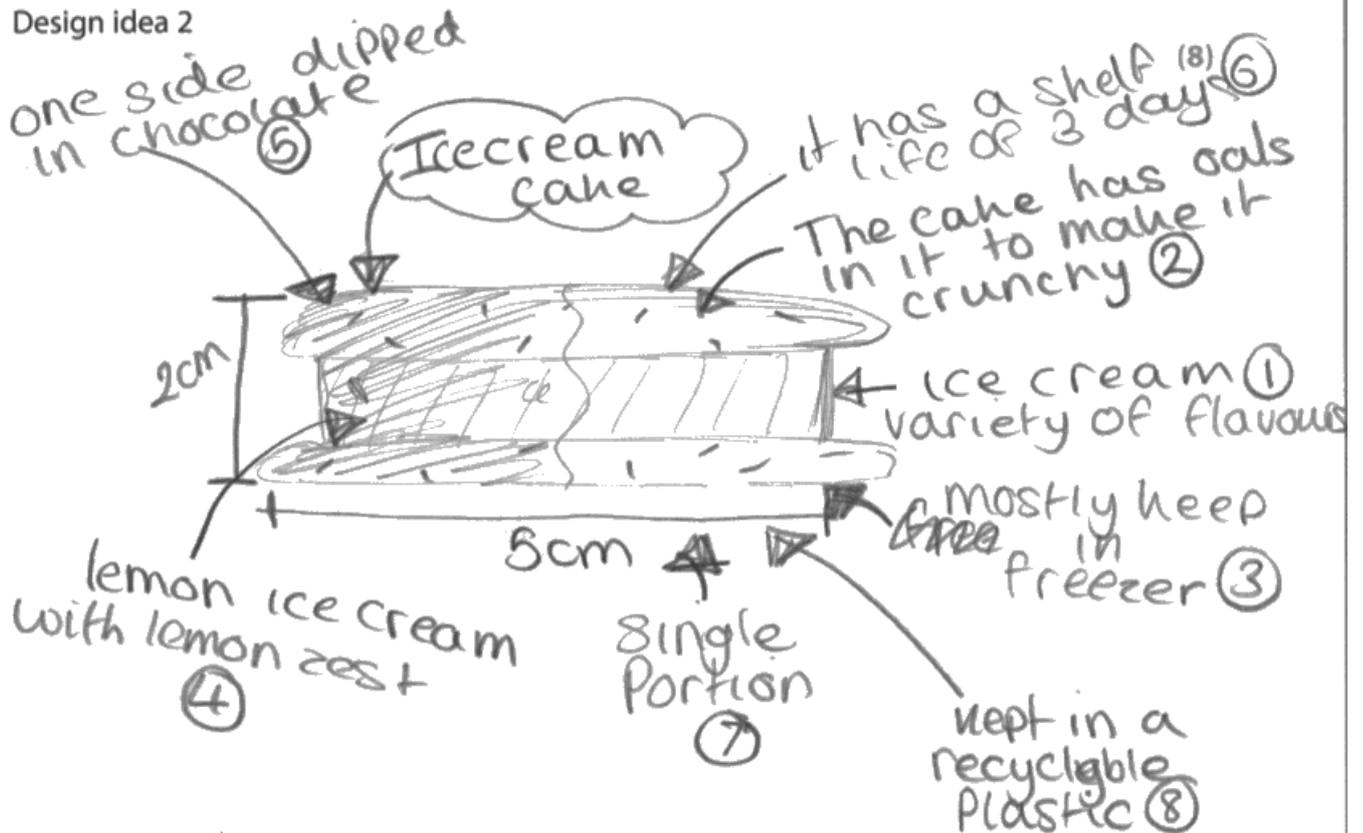
Coloured pens, pencils and highlighter pens must **not** be used.

Design idea 1

(8)



Design idea 2



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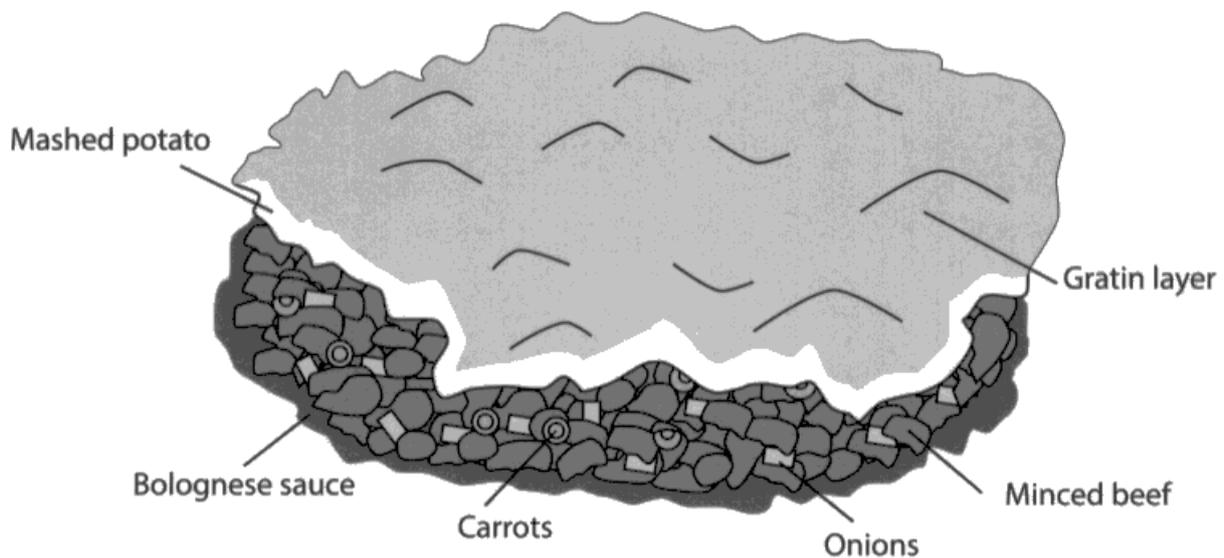
Clearly numbered points link to the specification with specific details.

Question 13 (a)

This question required candidates to demonstrate their knowledge of the working characteristics of ingredients within product analysis.

Most candidates could name one method of size reduction.

- 13 The drawing below shows a cottage pie sold in the freezer section of a supermarket.



- (a) Name a method of size reduction used for **one** ingredient in the preparation of the cottage pie.

(1)

Boiled potatoes are mashed to create mashed potato



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Well answered with dicing, mashing, mincing, slicing and grating the most common responses.

Question 13 (b)

There were very mixed responses here with candidates including golden colour as the answer. Only a few candidates identified the natural sugars in the onions as helping create the colour.

(b) Before preparing the bolognese sauce, the onions are caramelised.

Describe the caramelisation process.

(2)

The onions are cooked to a crisp, brown colour.



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Caramelisation is when natural sugar(s)(found in onions)(1) are heated/cooked in oil(1) and sugars decompose (1) to produce a golden brown (1) colour which can improve the flavour (1) and aroma (1) of a component.

Question 13 (c)

There were many positive responses to this question -- the most popular being to extend shelf life and prevent bacterial growth.

(c) The cottage pie has been prepared and processed by the manufacturer.

Give **two** advantages of using the freezing process for the cottage pie.

(2)

1. Prevent bacteria from growing.
2. Can be preserved for longer.



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Well answered by candidates with extending shelf life, preventing bacteria multiplying and retains nutritional content of food the most common responses.

Question 13 (d)

Candidates had varying degrees of success with this question, depending on their interpretation of the command word 'describe'. Where candidates provided a linked explanation to their initial statement, they were rewarded with the full two marks.

The most common answers were to do with reducing nutritional value, without any further description.

(d) Describe **one** effect of cooking on the nutritional value of foods.

(2)

When cooking sometimes the nutritional value of foods will be lost. This usually happens when it is being boiled for example as water soluble vitamins dissolve into the water. This means there will be a reduction in minerals and vitamins.



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This was poorly answered by most candidates with most only achieving 1 mark with the knowledge only including decrease in nutritional content. On a few occasions where vitamins mentioned as water soluble but this was few and far between.

Question 13 (e)

There was limited success with this question, with the concept 'traced/tracked' often mentioned but not developed further.

(e) Describe how traceability is used to ensure consumer safety during the manufacturing process.

(2)

Traceability is used to ensure customer safety during the manufacturing process as ~~the easier~~ you can see each place the food has gone and who did each stage so if there was a problem you can see what happened.



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Traceability where food can be traced or tracked (1) through the supply chain (1) to the point of production and distribution (1) using a database of registered stock (1) to control entry into the food chain(1) and to follow its journey through the production process to point of sale.(1)

Question 13 (f)

Most candidates gained either zero or 2 marks here as they were able to apply correct flavours or textures to the ingredients. Most popular answers were "soft, creamy mash, crunchy, crispy, cheesy gratin." Those not attaining marks talked generally about flavours or textures without using specific examples of ingredients from the dish.

Question 13 (f) (ii)

Most candidates gained the 2 marks for saying that the ingredients were "soft or small to prevent choking or to make them easy for the child to eat." A few discussed the "protein in the dish for growth."

Those that gained 1 mark failed to explain their answer.

(f) Explain why the cottage pie successfully meets the following specification points:

(i) contains a range of flavours and textures

(2)

It contains a range of flavours and textures through the use of mash potatoes which adds a smooth and creamier texture to the dish. Also it has carrots and bolognese sauce which enhance the flavours. Carrots add a crunchier texture. The sauce adds a

(ii) suitable for young children

variety texture

(2)

It is suitable for young children as it contains minced beef which is a HBU protein used for growth and repair. It contains carrots which is part of the five a day recommendation. It has a good fibre content.



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Most candidates gained full marks by including the correct flavours or textures to the ingredients. The most popular answers were soft, creamy mash, crunchy and crispy. Some candidates just talked about flavours or textures without using any examples of ingredients.

(f) Explain why the cottage pie successfully meets the following specification points:

(i) contains a range of flavours and textures

(2)

The mashed potato has a creamy and milky texture whereas the beef and sauce is in little chunks. The sauce has flavour whereas the mash is bland. They compliment each other.

(ii) suitable for young children

(2)

It is nutritional because it has all the food groups like vegetables. It also can be made to different sizes so people who are young can have it. There is also no extreme flavours which children normally dislike.



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Examiner Comments

Most candidates gained full marks for soft or small to prevent choking/or easy for the child to eat. The other popular answer was a link to the mild flavour suitable for young children as their taste buds are not fully developed yet.

Question 13 (g)

As an extended writing exercise linked to QWC, this question proved to be very challenging for many candidates. This question is marked using the level descriptors outlined in previous sample assessment materials in the teacher guidance that accompanies the specification materials. Candidates must demonstrate accurate technical vocabulary linked to food technology and a good understanding of the evaluation process. Where writing communicated answers effectively, with clarity and organisation, candidates were rewarded with high marks. It is possible to provide 3-4 well explained evaluated points to achieve the high marks. Candidates could answer this question in either a bullet pointed list or paragraph format, focusing on the main comparisons and similarities between the two recipes. To move the response from a weak/average answer to one that is worthy of full marks, requires explanation of each comparison together with clear, effective communication throughout the response.

Evaluation and comparison in this answer is worthy of a high level response in the level descriptors.

There was a very mixed response to this extended response question. Handwriting was a major issue for some of the candidates as the examiner found it very difficult to read. The best candidates used proper paragraphs to present their response. Those that did not do well either left the question blank or ended up repeating the same point throughout their answer without venturing onto alternative subtopics. Incorrect responses discussed the food safety issue of meat versus plants. Popular correct answers accurately explained that the plant protein was cheaper than the animal protein. Many candidates were able to discuss the reasoning due to the time and cost to rear an animal compared to farming crops. Many candidates successfully compared LBV to HBV proteins for their protein content. Only a few discussed altering the dish for vegetarians or the concept of LBV protein complementation. Marks awarded varied between 2 – 4 for the majority of candidates and several gained the full marks.

Also the bulk of the product is the meat so lots of it is needed making the price go up.

*** (g) Evaluate the cost of the animal and plant protein ingredients used in the cottage pie.**

(6)

There is more animal protein used in the cottage pie which means the cost of the product will go up in this respect as simply more is used. Animal proteins tend to be more expensive due to the fact that they have had to be fed (e.g. a cow) and reared from a young age in good conditions which takes a lot of time and money. The minced meat which is likely beef has had to go through a mechanical production technique that is mincing which also takes effort and time, which will be factored into the cost. A lot of safe and sterile packaging is used to keep the meat safe and plastic will add a cost to this product. The bolognese sauce will consist of a roux which has milk and butter in, both will be fairly cheap but can perish easily.

Carrots and onions will have small amounts of protein in them as they are found under the ground. These are both fairly priced as they can be produced in the UK so air miles is not brought into the cost. They are farmed in large quantities, which means that they can be sold cheaply as they are not hard to make. However pesticides may have been used to enhance the crop when growing which may cost. Gratin is a vegetable protein which is typically average priced but a lot is used to cover the top of the cottage pie which will make it more pricey. Overall the animal protein will cost more simply due to it being the main bulk of the product.



Many candidates focussed on the idea of HBV and LBV protein along with the production of meat compared to the production of plants. Others, however, looked at the prices paid in the supermarket and the meal as a total value to the consumer. Some were particularly well written, using DT terms where others were vague and some even using bullet points. This is an important question for the student in terms of being able to show their knowledge alongside their ability to write clearly with expression, correct grammar and punctuation.

Question 14 (a)

Good knowledge of labelling was demonstrated here with most candidates gaining 2 marks. A very common response from candidates was nutritional information, which isn't required by law unless it is supporting a healthy eating claim or marketing information where the nutritional value of the product is being promoted.

14 Labelling is used to inform and protect consumers.

(a) State **three** pieces of information required by law to be on a food label.

(3)

1 weight of product

2 ~~the~~ name ^{and address} of manufacturer

3 date code



Good accurate answer.

Question 14 (b)

Several candidates left this question blank. The majority gained 1 mark for this question. Popular correct answers were "quicker for customer at the till, easier to scan, making the product easy to trace, providing the information such as price or seeing what has been sold." Few candidates offered an explanation to gain the full 2 marks. Those that did receive full marks explained tracking as a means for assisting with product recall. Most popular incorrect answer discussed EPOS as an anti theft device.

(b) Explain **one** advantage of the bar code system.

(2)

very efficient way of pricing which makes the process of buying foods quick for customers.



Question 14 (c)

Quite mixed responses with a lot of candidates only achieving 1 mark for identifying the tamper evident seal or the 'pop' on jars to show that it has been opened. Most did not then explain why this was important.

- Tamper-evident seals are used by manufacturers to ensure a food product has not been contaminated or misused (1) by mistakenly opening and resealing foods (1).
- The seals also reassure customers (1) and act as a form of QC.(1)

There are a number of different types of seals available:

- Plastic collars on bottles e.g. sauces and marmalades (1)
- Tear-away strips around the top of bottles e.g. milk and drink products (1)
- Tin foil seals in pourable boxes e.g. cartons of juice (1)
- Plastic film wraps on cardboard boxes e.g. biscuits, chocolates (1)
- Plastic film on ready-meal trays (1)
- Jam jar lids with a press-to-check feature (1)

(c) Describe the use of **one** tamper-evident seal found on a food product.

(2)

the pressure-pop top ~~there~~ on jars allow consumers to check if the seal has been opened prior to the purchase.



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Examiner Comments

A statement and accurate linked response secures two marks. The named example is helpful for the candidate.

Question 14 (d)

There were some wild guesses and grave inaccuracies for this question. There was a very mixed response question here with candidates gaining zero, 2 or 4 marks. Popular correct answers were the issue of "unknown long term health side effects such as allergies," or they discussed "the unethical or unnatural" argument. Those that gained full marks knew about the "short term trials" and the issues of lacking biodiversity and elimination of species. Incorrect answers discussed adding chemicals to the food or other food safety issues. Many candidates discussed the issue of the nutritional content of the food being unknown which is a valid response yet was not on the mark scheme.

(d) Describe **two** concerns for the consumer of genetically modified (GM) foods.

(4)

1 It has not been tested enough or around long enough to see long term problems which could cause potential issues with health.

2 It may cause a reduction in traditional foods that will get disregarded as the crop yields do not grow as much as G-M foods. e.g. cabbage + carrots



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Examiner Comments

Very mixed responses to this question with the most common being it was unnatural and the side effects were unknown in the long term. Allergies were mentioned a lot and discussed, but again only awarding the candidates 1 or 2 marks.

(d) Describe **two** concerns for the consumer of genetically modified (GM) foods.

(4)

- 1 Consumers may be worried that the foods may harm them in some way or cause abnormalities in them or for pregnant women for the child.
- 2 They may think it unethical to modify foods as it is not how nature would have wanted it.



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Examiner Comments

GM is usually not well understood. Many responses earned 2 marks easily but then struggled to find a reasonable answer for the other two marks. More understanding of mutation and the effects on habitat and wildlife is required.

Question 14 (e)

This question was left blank by several candidates. Others that gained 0 marks did so by making irrelevant, vague comments about preservation or by incorrectly discussing dehydration and canning as poor preservation methods. Weaker candidates got 2-3 marks for making different valid points with little discussion. Handwriting was again a major problem with tiny lettering or rushed scrawl being extremely difficult to read. The examiner was able to award the full marks to many candidates. The strongest candidates structured their responses and had clearly made notes about the content of their answer before attempting it. This should be encouraged by centres as it usually led to the highest marks being awarded. All candidates were able to keep within the designated area for their response. Most popular responses for dehydration discussed "extending shelf life, removal of water & prevention of bacterial activity." Canning was less well answered with the majority of candidates thinking that the seal on the can was the main reason it was preserved, and failed to mention the heat treatment to destroy bacteria. The marks gained were for "extending shelf life and the sealing of the can to prevent contamination".

This question had a wide variety of responses, and in some cases, wasn't answered at all by candidates. There was a lot of repetition between responses for both dehydration and canning with the most popular being to extend shelf life. Dehydration was answered more favourably than canning – with candidates aware that it lacks moisture/water and therefore it could prevent any bacteria from multiplying. Canning was only mentioned in depth with regards to the seal being broken or to preserve it by sealing out bacteria, with little or no detail/explanation as to why.

*(e) Discuss the ways in which the following methods of preservation can affect the shelf life of foods:

Dehydration

Canning

(6)

Dehydration can increase the shelf life of food as it can stop microbial growth. This helps extend the shelf life from roughly one week to one month depending on the product itself.

Canning requires a high temperature as it is a hot preservation method. Canning also helps to extend shelf life by for products such as fish.

Et The high temperature will cause enzymes to denature and they will no longer function properly. This results in microorganisms such as

bacteria and fungi to stop growing. This will cause ~~cause~~ Canning shrinks a product and ~~it~~ and it is placed into a tin. However, the shelf

life can also be smaller as the impurities of the can itself can affect the texture of the food product which could possibly contaminate it.

Also since the product is in a can no microorganisms can enter it preventing the product from contamination. This will result in an ~~extended~~ a longer shelf life.



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Examiner Comments

Many candidates provided a lot of detail here and could link the preservation method to how it hindered bacterial growth. Some very good answers seen overall.

Paper Summary

Centres are continuing to make very good progress with the delivery of the GCSE Food Technology specification, and have a good understanding of the requirements of the GCSE course, thus allowing their candidates to access the full range of marks available.

Based on their performance on this paper, candidates are offered the following advice:

- Describe' / 'explain' type question require more practice. Candidates must support their answers with examples and linked responses in order to access the full marks available.
- Candidates should pay attention to the questions that assess Quality of Written Communication.
- There is enough space provided in the question paper for your answers. Always plan your answers carefully and if you need more space, use additional sheets.
- If you use additional paper, annotate this in the margin next to your answer and then continue onto additional paper.
- Familiarise yourself with the format of the multiple choice questions and practice these type of questions regularly.
- Draft the extended writing answers carefully to ensure you present a balanced answer for 'discuss' and 'evaluate' questions.
- Revise thoroughly and use internet revision sites (BBC bitesize revision) or subject related textbooks to check your knowledge and understanding.
- Make sure your hand writing is legible.

This 2016 paper performed well and produced highly effective differentiation for our candidates.

Grade Boundaries

Grade boundaries for this, and all other papers, can be found on the website on this link:

<http://www.edexcel.com/iwantto/Pages/grade-boundaries.aspx>

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